

Particle Cosmology after Planck



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**Particle Cosmology
after Planck**

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Chiral Gravity Waves and Leptogenesis in Inflationary Models with non-Abelian Gauge Fields

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We present a leptogenesis scenario associated with inflationary models involving non-Abelian gauge fields within the standard model of particle physics (SM). We show that this class of inflationary models generates intrinsic birefringent gravitational waves that through the gravitational chiral anomaly in SM, can naturally create a net lepton number density. The CP violating interaction is produced by tensor fluctuations of the gauge field, while the efficiency of this process is determined by the effective background value of the gauge field. We demonstrate that this mechanism can create the observed value of baryon to photon number density in a natural range of parameters of these models.

Primary author: Dr MALEKNEJAD, Azadeh (Institute for Research in Fundamental Sciences)

Presenter: Dr MALEKNEJAD, Azadeh (Institute for Research in Fundamental Sciences)

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